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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,852	11/14/2001	Bonne W. Posma	84738.000002	7994
23387	7590	04/07/2004	EXAMINER	
Stephen B. Salai, Esq. Harter, Secrest & Emery LLP 1600 Bausch & Lomb Place Rochester, NY 14604-2711			LEYKIN, RITA	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/993,852

Applicant(s)

POSMA ET AL.

Examiner

Rita Leykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-43 is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

This office action is in response to remarks filed on 10/24/03 and 01/07/04.

Applicant's arguments have been considered. The finality of previous office action is withdrawn.

Applicant is reminded that examiner's responsibility is to give the broadest interpretation to the language of the submitted application. The broad language of independent claim 1 and others reads on the prior document by Hermansson et al. US # 3,577,055.

Applicant is arguing that shown in the prior document, converter 8 is assumed to consist of uncontrolled diode rectifiers. In fact, different well known converters can be used including, for example, converter 5 in US # 3,548,275 issued to Junpei Inagaki et al.

Based on additional examination and known technological solutions in the field of the regenerative motor braking the indication of allowable subject matter to claims 11-16 is withdrawn.

The examiner maintains the rejection as follows.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Hermansson US # 3,577,055 and Junpei Inagaki et al. US # 3,548,275.

With respect to claims 1, 7 and 10-16 in Fig. 1 Hermansson shows a dc motor that is used as a driving motor for a streetcar. The motor is connected to a dc network 5, which is fed by rectifier 8 in conjunction with dc/dc power source, as also claimed in claim 10.

During a regenerative braking the braking effect is controlled by ignition and extinction of the thyristor 4 (freewheeling diode). When the thyristor 4 is fired ("On") the motor 1 is short-circuited and the motor current increases. When the motor current is sufficiently high the thyristor 4 is blocked ("Off"), as in claim 7. By altering the relative connection time of the thyristor 4 it is possible to gradually alter the effective road resistance and thus the braking force, (see column 2, lines 7-54). In column 3, lines 16-22 Hermansson explains that his embodiment is shown schematically by omitting some of the elements.

Hermansson do not teach specifically a converter that includes controlled plurality of solid-state switches. However, Junpei Inagaki et al. in Fig.1, show such converter 5 that consists of controlled three-phase SCR rectifier elements 7-12, (as in claims 4 and 5) and having freewheeling circuit 20 in connection to SCR chopper diode 2, (as in claim 3). Also, switching device 22 and controller 19 are in electrical connection with converter 5 and source of power 1, (as in claims 6). The provided schematic diagram is used for regenerative braking via disabling of the chopper diode 2, (see

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column 3, lines 25-52). The gate control circuit 19 is constructed to supply ignition pulses to gate electrodes of thyristors 7- 12 of the semiconductor type commutator 5, wherein the amount of current flowing through the motor is controlled by, chopper diode 2 that will provide for claimed pulse modulation as in claims 12 and 15, (see column 3, lines 25-53).

With respect to claims 2 and 9 the choice of power source being AC/DC power source or dc/dc power source is dictated by the design.

Hence, it has been obvious to one of ordinary skills in the art, at the time invention was made to use above teachings in combination for a regenerative braking power supply for a direct current traction motor as in Hermansson, having converter with plurality of controlled solid-state switches as in Junpei Inagaki et al.

The reason is to originate switching sequence of converter solid-state switches in connection with the motor windings during regenerative braking and re-direct excess of energy during braking.

***Allowable Subject Matter***

3. Claims 17-41 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter:

Prior art listed in the attached PTO-892 form considered to be pertinent to the submitted application. However, none of the cited prior art teaches or suggests: in combination:

- A transformerless dual DC traction motor controller comprising a mode switcher for connecting two DC traction motors to a converter output in series in a first mode and connecting two DC traction motors to the output in circulating-current-free armature parallel configuration in a second mode;
- A method for controlling two DC traction motors each motor having an armature and a field winding including connecting the field windings of the two DC traction motors in series, connecting the armatures of the DC traction motors to the series connected field windings and switching the armatures between a first series connected mode and a second circulating-current-free parallel mode.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita Leykin whose telephone number is (571)272-2066. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on (571)272-2071. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rita Leykin  
Primary Examiner  
Art Unit 2837

A handwritten signature in black ink, appearing to read "Rita Leykin", written in a cursive style.

R.L.